

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

In the Matter of)	RM-11738
)	
Realignment of the)	
896-901/935-940 MHz Band)	
To Create a Private Enterprise)	
Broadband Allocation)	

To: The Commission

COMMENTS

**Of the National Rural Telecommunications Cooperative
In Response to
Petition for Rulemaking by the
Enterprise Wireless Alliance and Pacific Datavision, Inc.**

**Jack Richards
Greg Kunkle
Keller and Heckman LLP
1001 G Street NW, Suite 500 West
Washington, DC 20001
202.434.4210
richards@khlaw.com
*Its Attorneys***

**Robert A. Fuhrer
Vice President & General Counsel
National Rural Telecommunications Cooperative
2121 Cooperative Way
Herndon VA 20171**

January 12, 2015

COMMENTS

By its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's Rules,¹ the National Rural Telecommunications Cooperative ("NRTC") submits these Comments in response to the Petition for Rulemaking ("Petition") filed by the Enterprise Wireless Alliance and Pacific Datavision, Inc. ("Petitioners").² NRTC supports the introduction of much needed broadband spectrum targeted for use by electric utilities and others in the Critical Infrastructure Industries ("CII"), and therefore supports *in concept* the notion of the realignment proposed by Petitioners. NRTC is concerned, however, that the Petition fails to provide sufficient technical information to justify initiation of a rulemaking proceeding at this point. Even basic technical parameters, including power limits, authorized antenna heights, and permissible out-of-band-emissions, are absent from the Petition and unavailable for comment.

Before proposing specific rules for adoption in a Notice of Proposed Rulemaking ("NPRM"), the Commission should undertake a Notice of Inquiry ("NOI") enabling Petitioners' to identify with particularity the technical parameters and other aspects of their proposed operations. Based on further information from Petitioners during an NOI, NRTC and others will then be able to determine whether operations of smart grid and other equipment on adjacent frequencies will be sufficiently protected from interference. Until these types of issues are clarified, an NPRM is premature. As it has in several instances of this nature in the past, the Commission can count on NRTC to be a constructive party in working with all affected parties to develop appropriate and reasonable solutions.

¹ 47 C.F.R. §§1.415, 1.419 (2014).

² Public Notice, Wireless Telecommunications Bureau Seeks Comments on Enterprise Wireless Alliance and Pacific Datavision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum, RM-11738, DA 14-1723 (Nov. 26, 2014) ("PEBB Public Notice").

Background

Founded in 1986 by electric cooperatives, the National Rural Electric Cooperative Association (“NRECA”), and the National Rural Utilities Cooperative Finance Corporation (“CFC”), NRTC is a non-profit cooperative association representing the interests of more than 1,500 rural utilities and affiliates in 48 states. NRTC also serves as the manager and majority interest holder of NRTC LLC.³ NRTC’s mission is to ensure state-of-the-art telecommunications services are available throughout rural America, just as they are in more urbanized areas.

To that end, NRTC provides products and services developed specifically to meet the needs of rural utilities and their customers, such as high-speed Internet access via satellite, automated utility systems (including AMI and SCADA), wireless technologies, long distance programs, ISP, Internet and help desk services, mobile phone service, IP backbone services, and programming distribution rights for video providers.

To facilitate its members’ deployment of integrated smart grid technologies and energy efficiency solutions, NRTC entered into an exclusive arrangement with Sensus USA, Inc. (“Sensus”) to market Sensus’s equipment to NRTC’s membership. Sensus is a leading provider of grid optimization solutions to electric cooperatives and offers products and services to address their specific requirements. Its suite of solutions and services includes utility communication networks, smart metering, distribution automation, management software, lighting control and

³ NRTC formed NRTC LLC to hold assets associated with its 220 MHz network. NRTC LLC holds the following different types of licenses in the 220 MHz band: (1) a 5-channel Phase I Nationwide license (WPCU 518); (2) a 10-channel Phase II Nationwide license (WPOI 700); (3) six 7-channel Phase II Regional licenses (WPOL 329-334); and (4) a 15-channel Phase II Regional license (WPOK 780). NRTC LLC incorporates these licenses into a network of twenty-two 5 kHz channels effectively covering the entire United States, including all of rural America.

hosted services, leading toward more efficient operations, increased network bandwidth, greater coverage, stronger security, and mission-critical reliability.⁴

Sensus' "FlexNet" systems are used by electric cooperatives and other utilities for Advanced Metering Infrastructure ("AMI"), demand response, Supervisory Control and Data Acquisition ("SCADA"), voltage regulation, and other functionalities. Among other things, the equipment generates automated data for timely billing and allows customers to track and monitor energy usage. Data generated by these systems allow utilities to operate their networks more efficiently, to increase system reliability, to improve customer and employee safety, and to identify and rectify power outages.⁵

Equipment manufactured by Sensus and distributed by NRTC to its members is operated on narrowband PCS spectrum at 901/940 MHz, adjacent to the 896-901/935-940 MHz band proposed in the Petition for reallocation to Private Enterprise Broadband (PEBB).

NRTC estimates it has installed (or has under contract to install) approximately 500,000 Sensus units for more than 50 rural electric cooperatives throughout the country, each of which by necessity relies on the continued availability of the 901/940 MHz band to support its operations. NRTC anticipates that these figures will increase substantially over the next 5 years as more rural electric utilities adopt smart grid technologies. Sensus advises NRTC that more than 15,000,000 units have been installed and are operated by utilities in the 901/940 MHz band nationwide.

The PEBB Proposal

Petitioners note the Commission is overseeing a broadband revolution but has not yet identified spectrum intended specifically to accommodate the broadband requirements of

⁴ <http://sensus.com/web/usca/products/electric>, visited Dec. 31, 2014.

⁵ Id.

business enterprises. To that end, Petitioners have determined a realignment of the 900 MHz allocation represents a rare opportunity to create a broadband service dedicated to meeting the needs of electric utilities, oil and gas companies, and others in the CII community.⁶

Petitioners recommend the 900 MHz band be sub-divided into narrowband and broadband segments to allow for the adoption of a PEBB allocation via a single two hundred forty (240)-channel license (898-901/937-940 MHz) issued on an SMR MTA basis. Spectrum below 898/937 MHz would be retained for both site-based and geographic narrowband operations.

Recognizing out-of-band systems (*e.g.*, 901/940 MHz) are entitled to protection from any 900 MHz broadband allocation, Petitioners indicate certain issues “must be vetted during the rulemaking process.”⁷ In particular, they reference a recent meeting with Sensus and others, where the parties discussed “a variety of approaches that, individually or collectively, could mitigate the potential system performance impact on smart grid systems manufactured by Sensus and deployed in the Narrowband PCS spectrum at 940-941 MHz by Southern Company and CII utilities (*e.g.*, electric, water and natural gas distribution utilities) in other markets that is directly attributable to the presence of 900 MHz PEBB operations.”⁸

Petitioners acknowledge PEBB must be a compatible neighbor for narrowband operations in the band immediately above 901/940 MHz.⁹ They state “[t]he protection requirements of adjacent 900 MHz narrowband systems are well known, and discussions have been initiated regarding the needs of users operating in the 940-941 MHz band.”¹⁰ Further, “[a]ll incumbents

⁶ Petition, p. ii.

⁷ Id, p. 12, n.23.

⁸ Id.

⁹ Petition, pp. 14-15, n.25.

¹⁰ Id.

will be afforded every protection against interference to which they are entitled under the FCC rules.”¹¹

Petitioners also state “[t]o the extent that cooperative testing is needed to determine how best to ensure that adequate protection will be provided [to narrowband PCS operations], PDV is committed to participating in that testing and would endorse FCC oversight of the process if appropriate.”¹² They suggest this issue can be examined fully and resolved during the course of the rulemaking proceeding.

Comments

NRTC commends Petitioners for presenting a unique proposal designed to address a recognized shortfall in available broadband spectrum for use by electric utilities and others in the CII community. At this point, however, significant technical and other questions regarding Petitioners’ proposals remain unanswered.

In particular, without further information, NRTC is unable to determine whether Sensus’ FlexNet radio systems already deployed by electric cooperatives throughout rural America will experience significant adjacent-channel interference from PEBB operations on nearby frequencies. At best, existing utility operations at 901/940 MHz may require costly new infrastructure to maintain their current level of service.

To NRTC’s knowledge, the Commission has never proposed this type of extensive broadband operation in close spectral proximity to millions of devices already operating on adjacent channels in conformance with existing regulations. Rather than embarking on an NPRM to adopt the Petition’s proposals, NRTC urges the Commission to first issue an NOI to identify, explore, and resolve unanswered questions. An NOI is the appropriate vehicle to gather

¹¹ Id.

¹² Id.

information underlying a proposal -- not an NPRM proposing rules the Commission presumably intends to adopt unless persuaded otherwise.

Lack of Technical Information

The Petition discusses in detail the reallocation of the 900 MHz band for a broadband LTE offering but is largely silent on the technical parameters of the proposed operations. Petitioners have suggested no power limits, authorized antenna heights, permissible out-of-band-emissions or other technical rules.

Since the Petition lacks technical support, the PEBB Public Notice asks about changes in the Commission's technical rules to enable the PEBB licensee to provide the contemplated broadband service and to prevent interference between the PEBB licensee and adjacent-channel operations.¹³ These types of fundamental, threshold issues, however, should be identified and resolved before the Commission endorses the Petition and initiates a rulemaking proceeding to adopt its proposals.

For instance, the Petition offers no technical assurances that a broadband LTE network can coexist with adjacent narrowband operations without the use of a guard band. In the 800 MHz band and 700 MHz public safety narrowband channel block, the Commission established a guard band between broadband licensees and private land mobile operations. No such guard band is proposed by the Petition.

These types of relevant, important, unresolved technical issues cannot safely be examined during the course of a rulemaking proceeding proposing specific rules to implement a PEBB spectrum reallocation.¹⁴ Rather, they should be identified, analyzed and resolved before

¹³ See Public Notice at 2.

¹⁴ Id, p. 15, n.25.

issuance of an NPRM, so interested parties may have a fair opportunity to comment on them before the Commission embarks on a rulemaking proceeding proposing to adopt specific rules.

Continued Technical Shortcomings in the Petition

Petitioners themselves recognize the scope of the technical uncertainty in this proceeding when they offer to participate in joint testing with the Commission to ensure adequate protection for adjacent channel users.¹⁵ While NRTC appreciates the offer to work together to address unresolved technical issues, an NPRM is premature when based on proposals that by Petitioners' own account may require testing to ensure adequate protection to existing adjacent channel users.

Nor is it much comfort when Petitioners assert the "protection requirements of adjacent 900 MHz narrowband systems are well known," and "[a]ll incumbents will be afforded every protection against interference to which they are entitled under the FCC rules."¹⁶ Since NRTC and other commenters at this point lack technical information about Petitioners' proposed operations, the exact protection parameters are unknown and unavailable for meaningful comment.

Petitioners may be referring to Section 90.673 of the Commission's rules, which provides that any licensee causing unacceptable interference to a non-cellular licensee in the 800 MHz band shall be strictly accountable to abate the interference.¹⁷ That rule, however, does not define unacceptable levels of interference nor did it envision interference caused by LTE broadband systems to adjacent channel narrowband PCS systems. Petitioners also may be referring to the definition of "Harmful Interference" in Section 1.907¹⁸ and the technical limitations in Part 24 of the Commission's Rules governing Narrowband PCS Operations, including §24.131 (Authorized

¹⁵ Petition, pp. 14-15. n. 25.

¹⁶ Id. .

¹⁷ 47 C.F.R. §90.673(a).

¹⁸ "Harmful interference" is defined in the Rules as "interference that...seriously degrades, obstructs, or repeatedly interrupts a radio communications service operating in accordance with the Radio Regulations." 47 C.F.R. §1.907.

bandwidth), §24.132 (Power and antenna height limits), §24.133 (Emission limits), §24.134 (Co-channel separation criteria), and §24.135 (Frequency stability).¹⁹ Likewise, however, these latter rules apply only to operations of Personal Communications Services in the 901-902, 920-931, and 940-941 MHz bands (the “900 MHz band”). They do not define harmful interference.

None of these rules was designed to govern the operation of LTE broadband systems on adjacent frequencies or to resolve interference disputes between broadband operations below 940 MHz and narrowband PCS operations above it.²⁰

Additional Unanswered Questions

Technical detail is not the only unknown at this point. A variety of other core questions remain unanswered. How will the transition process occur? What specific criteria will define comparable facilities? What happens if contiguous spectrum cannot be stitched together? What sort of LTE will be used? How long will it take to get standardized? When will equipment be developed? How and when will the Petition specifically benefit CII? What sort of services can be realized? How will the network be built, by whom, and when? Will Petitioners be permitted to sell the spectrum to third parties if the rules are changed as requested? Should the FCC impose new obligations, such as construction benchmarks, to address unjust enrichment stemming from a new, customized band plan?

All of these types of unanswered questions demonstrate the need for a broad NOI to gather information rather than a targeted NPRM to adopt specific rules. Until these and related questions are answered with some degree of certainty, no one (including FCC staff) can react to or comment meaningfully on the Petition.

¹⁹ 47 C.F.R. §§24.131, 24.132, 24.133, 24.134, 24.135.

²⁰ 47 C.F.R. §24.100.

Conclusion

While supporting Petitioners' efforts to develop much needed broadband spectrum targeted for use by electric utilities and others in the Critical Infrastructure Industries, NRTC is unable to endorse the Petition without further detail regarding Petitioners' proposed operating parameters and service offerings. These types of core questions should be answered before issuance of an NPRM, not after.

NRTC urges the Commission to issue a Notice of Inquiry so all relevant issues – especially the impact of Petitioners' proposal on millions of Sensus devices currently operated by rural electric cooperatives and others on nearby frequencies – can be identified, studied, and resolved before an NPRM is launched to adopt Petitioners' proposals. NRTC looks forward to working with the Commission, Petitioners, and all affected parties to develop appropriate and reasonable solutions as part of the process.

Respectfully submitted,

**The National Rural Telecommunications
Cooperative**

By:


Jack Richards
Greg Kunkle
Keller and Heckman LLP
1001 G Street NW, Suite 500 West
Washington, DC 20001
202.434.4210
richards@khlaw.com
Its Attorneys

Robert A. Fuhrer
Vice President & General Counsel
National Rural Telecommunications Cooperative
2121 Cooperative Way
Herndon VA 20171